REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 1, 6-8, 13-15, 18-20, 23, and 24 are pending. Claims 1, 8, 15, and 20 are amended. Claims 1, 8, 15, and 20 are independent. The Examiner is respectfully requested to reconsider the rejections in the Office Action in view of the amendments and remarks set forth herein.

Rejection Under 35 U.S.C. §103(a)

Claims 1, 6-8, 13-15, 18-20, 23, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Whittenberger et al (U.S. 5.651,906) in view of Kohno et al. (U.S. 5,653,825), Arai et al. (U.S. 5,151,254), Nonnenmann (U.S. 4,665,051), and either of Toyoda et al. (U.S. 5,336,472) and Maus (U.S. 4,713,361). These claims are further rejected as being unpatentable over Honma (U.S. 5,323,608) in view of Kohno et al., Arai et al., Nonnenmann, and either of Toyoda et al. and Maus. These rejections are respectfully traversed.

While not conceding the appropriateness of the rejections, but merely to advance the prosecution of the present application, independent claims 1, 8, 15, and 20 are amended herein to recite combinations of elements directed to a metal carrier for a catalyst, including:

the honeycomb structure having alternating waved plates and base plates, the waved plates having first sections that are substantially flat, and each of the base plates having an inner and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively, the waved plates also having second sections extending outwardly from each of the base plates to the base plate immediately adjacent thereto,

wherein the second sections of the waved plates are uninterrupted planar surfaces extending an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

Full support for the honeycomb structure having alternating waved plates 7 and base plates 8, the waved plates 7 having first sections that are substantially flat, and each of the base plates 8 having an inner and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates 7 located inwardly and outwardly thereof, respectively, the waved plates 7 also having second sections extending outwardly from each of the base plates 8 to the base plate immediately adjacent thereto, wherein the second sections of the waved plates 7 are uninterrupted planar surfaces extending an axial direction from one end of the metal carrier 2 to another, thus forming air vents 4 as uninterrupted passages from one end of the metal carrier 2 to the other end, can be seen in FIG. 2 and 4. FIG. 4 in particular shows the second sections of the waved plates 7 being uninterrupted planar surfaces extending an axial direction from one end of the metal carrier 2 to another, thus forming air vents 4 as uninterrupted passages from one end of the metal carrier 2 to the other end.

Since the air vents 4 are formed as uninterrupted passages from one end of the metal carrier 2 to the other end, a metal carrier for the catalyst provided by the present invention provides a simple structure with excellent air flow, along with high temperature oxidation resistance, and good deformation resistance.

The Applicants respectfully submit that none of the references cited by the Examiner teaches or suggests, for example, a the second sections of the waved plates being uninterrupted

planar surfaces extending an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

A. Arguments regarding the rejection Whittenberger et al. (U.S. 5.651,906) in view of Kohno et al. (U.S. 5,653,825), Arai et al. (U.S. 5,151,254), Nonnenmann (U.S. 4,665, 051), and either of Toyoda et al. (U.S. 5,336,472) and Maus (U.S. 4,713,361).

The Applicants respectfully submit that Whittenberger et al. merely discloses air vents formed by corrugated or involute core elements and which vary in size, and fail to teach or suggest a honeycomb structure having alternating waved plates and base plates, the waved plates having first sections that are substantially flat, and each of the base plates having an inner and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively, the waved plates also having second sections extending outwardly from each of the base plates to the base plate immediately adjacent thereto, wherein the second sections of the waved plates are uninterrupted planar surfaces extending an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

Kohno et al. merely disclose stainless steel sheets having a Mo content of not more than 2.0%, and Arai et al. merely disclose coating a catalyst layer. Neither of these references provides any teaching or suggestion about size of the air vents or about flat sections on the waved plate. Further Nonnenmann is directed to a device having a waved plate with staggered segments 3a, 3b, 3c, for the specific purpose of increasing air flow resistance in the air vents.

Regarding the Toyoda et al. and Maus documents, these references also fail to teach or suggest the honeycomb structure having alternating waved plates and base plates, the waved

plates having first sections that are substantially flat, and each of the base plates having an inner and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively, the waved plates also having second sections extending outwardly from each of the base plates to the base plate immediately adjacent thereto, wherein the second sections of the waved plates are uninterrupted planar surfaces extending an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

In contrast to the presently claimed invention, Toyoda et al., merely disclose a flat plate 1 being welded along a narrow line and thus being separated from the curved corrugated plate 3; and also disclose the casing 4 being a different material from the flat plate. (See column 2, lines 8-44 and Fig. 1(a) and (b)). Further, Toyoda et al., in the discussion about the Toyoda et al. device, merely disclose two flat plates 1, 1 used in a pair between each corrugated plate 3 (See the claims and FIG. 2(a), FIG. 3(a), FIG. 4(a) and (b), and FIG. 5, all of which disclose two flat plates 1,1). Thus, in the Toyoda et al. device, only one surface of the each flat plate 1, 1 faces a corrugated plate 3, while the other surface of each flat plate 1, 1 faces another flat plate 1,1. Thus Toyoda et al. cannot be combined with Whittenberger et al., Kohno, Arai and Nonnenmann to teach the present invention.

On page 4 of the Office Action, the Examiner alleges that Maus discloses "the conventionality of providing the honeycomb structure in which the outermost air vents are formed in cooperation of an entire surface of the case". By contrast, claims 1, 8, 15, and 20 of the present invention set forth "air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the

honeycomb structure". A careful review of Maus Fig. 1, shows that Maus fails to teach this; the outermost air vents of Maus are formed outside of the case, and thus cannot cooperate with an inner surface of the case, as set forth in the claims of the present invention. Moreover, while Maus teaches alternating waved and base plates, the waved plates of Maus are not formed with flat sections, as set forth in the claims of the present invention. Thus, Maus cannot be combined with Whittenberger, Kohno, Arai, and Nonnenmann to teach the present invention.

B. Arguments regarding the rejection Honma (U.S. 5.323,608) in view of Kohno et al. (U.S. 5,653,825), Arai et al. (U.S. 5,151,254), Nonnenmann (U.S. 4,665,051), and either of Toyoda et al. (U.S. 5,336,472) and Maus (U.S. 4,713,361).

The Applicants respectfully submit that Honma merely discloses a corrugated sheet having a continuous "S" shape, and fails to teach or suggest a honeycomb structure having alternating waved plates and base plates, the waved plates having first sections that are substantially flat, and each of the base plates having an inner and an outer surface being disposed against the first flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively, the waved plates also having second sections extending outwardly from each of the base plates to the base plate immediately adjacent thereto, wherein the second sections of the waved plates are uninterrupted planar surfaces extending in an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

Kohno et al. merely disclose stainless steel sheets having a Mo content of not more than 2.0%, and Arai et al. merely disclose coating a catalyst layer. Neither of these references

provides any teaching or suggestion about size of the air vents or about flat sections on the waved plate.

Regarding the Toyoda et al. and Maus documents, these references also fail to teach or suggest the honeycomb structure having alternating waved plates and base plates, the waved plates having sections that are substantially flat, and each of the base plates having an inner and an outer surface being disposed against the flat sections of adjoining ones of the waved plates located inwardly and outwardly thereof, respectively, the waved plates also having second sections extending outwardly from each of the base plates to the base plate immediately adjacent thereto, wherein the second sections of the waved plates are uninterrupted planar surfaces extending an axial direction from one end of the metal carrier to another, thus forming air vents as uninterrupted passages from one end of the metal carrier to the other end.

In contrast to the presently claimed invention, Toyoda et al., in the discussion about prior art, merely disclose a flat plate 1 being welded along a narrow line and thus being separated from curved corrugated plate 3; and also and merely disclose casing 4 being a different material than flat plate. (See column 2, lines 8-44 and Fig. 1(a) and (b)). Further, Toyoda et al., in the discussion about the Toyoda et al. device, merely discloses two flat plates 1, 1 used in a pair between each corrugated plate 3 (See the claims and FIG. 2(a), FIG. 3(a), FIG. 4(a) and (b), and FIG. 5, all of which disclose two flat plates 1,1). Thus, in the Toyoda et al. device, only one surface of the each flat plate 1, 1 faces a corrugated plate 3, while the other surface of each flat plate 1,1 faces another flat plate 1,1. Thus, Toyoda et al. cannot be combined with Honma, Kohno, Arai, and Nonnenmann to teach the present invention.

On page 4 of the Office Action, the Examiner alleges that Maus discloses "the conventionality of providing the honeycomb structure in which the outermost air vents are formed in cooperation of an entire surface of the case". By contrast, claims 1, 8, 15, and 20 of the present invention set forth "air vents existing at an outermost position of the honeycomb structure is formed by cooperation of an entire inner face of the case and a waved plate of the honeycomb structure". A careful review of Maus Fig. 1, shows that Maus fails to teach this; the outermost air vents of Maus are formed outside of the case, and thus cannot cooperate with an inner surface of the case, as set froth in the claims of the present invention. Moreover, while Maus teaches alternating waved and base plates, the waved plates of Maus are not formed with flat sections, as set forth in the claims of the present invention. Thus, Maus cannot be combined with Honma, Kohno, Arai, and Nonnenmann to teach the present invention.

In view of above described amendments and arguments, it is respectfully submitted that the cited references, taken alone or in combination, fail to teach or suggest the novel combination of elements of the present invention. Accordingly, the rejection under 35 U.S.C. §103(a) has been overcome, and independent claims 1, 8, 15, and 20, as amended herein, as well as the claims depending therefrom, are believed to be in condition for allowance.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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